



PROTECT

DANGEROUS GOODS MESSAGE SCENARIO

PART I

GENERAL

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1. FOREWORD

This document contains the specification of PROTECT Dangerous Goods Messages to be used for electronic data interchange (EDI) in EDIFACT format between ship's agents or forwarders and their Port and/or Inland Water Authorities.

The core message of the scenario is the International Forwarding and Transport *Dangerous Goods Notification* message (IFTDGN) containing the information on dangerous goods for a means of transport such as a vessel, train, truck or barge, as required by Port Authorities and Inland Water Authorities.

The second message in the scenario is the message for the *Acknowledgement* of a received IFTDGN message (APERAK).

The ability to cancel a previously sent IFTDGN message is now incorporated in the IFTDGN message specification, using an appropriate code in the BGM segment.

This new version of the PROTECT Guide has been created to :

1. take into account the business requirements in the areas of port handling activities and dangerous goods information especially for dangerous goods in limited quantities, polluting and noxious substances, radioactive materials and explosives.
2. present an up-to-date harmonised user guide based on the latest international UN/EDIFACT standards and aligned with the General Recommendations and the Principles and Rules for the implementation of the IFTDGN and APERAK, as published by ITIGG (International Transport Messages Implementation Guidelines Group) after consultation with PROTECT.
3. fulfil the wish of IMO's Facilitation Committee to enable global use of these messages based on common implementation guides in line with IMO standards and agreements.

The development work for this PROTECT Message Scenario has been undertaken by the PROTECT Group, which consists of a number of co-operating Port Authorities around the North Sea: Antwerp, Bremen, Hamburg, Le Havre, Felixstowe and Rotterdam.

These Port Authorities are supported by the EDI Service Providers in their ports: in Antwerp: SEAGHA, in Bremen: DBH, in Hamburg: DAKOSY, in Le Havre: SOGET, in Felixstowe: MCP and in Rotterdam: debis IT Services Benelux (formerly INTIS).

1.1. Background and context

1.1.1. History

For more than ten years PROTECT has been the banner under which the ports of Antwerp, Bremen, Felixstowe, Hamburg, Le Havre and Rotterdam (later joined by London) have combined their efforts to develop a method for data exchange for vessels visiting these ports. The data includes details of dangerous goods aboard the vessels, as well as other port related information.

Concentrating on a standardised format for dangerous goods notification, the PROTECT group first developed a message framework for dangerous goods notification from the shipping lines (or their agents and forwarders) to the Port Authorities: the IFTDGN message.

To support the notification from liner agent to Port Authorities a second message was developed for the exchange of dangerous goods data between agents: the IFTIAG message. The majority of the data for both messages is essentially the same, therefore in practice the IFTDGN can also be used for the inter-port data exchange between agents. An agent receiving the IFTDGN from an agent in another port can redirect the data selectively to notify his own port authority. He has only to merge the data he receives with data relating to the identity of the dangerous goods under his responsibility to create his notification.

The messages developed were submitted for standardisation to UN/EDIFACT through the Western European UN/EDIFACT Board, Message Development group 2 for Transport (WEEB/MD2, later called EEG2, European Experts Group 2 for Transport) and were accepted world-wide by the other regions of the EDIFACT Board in the UN/ECE/TRADE/ Working Party 4.

In mid 1994 the Port Authorities in the PROTECT ports formed the PROTECT Group supported by their Port EDI Service Providers (Port Community Systems) and organised through EurotransPortnet. It was realised that standardising the format for the dangerous goods notification (IFTDGN) alone was not enough to create a totally standardised notification procedure.

It was accepted that differences existed in national, local and Port Authority legislation. These differences could not be eliminated (at least in the short term) so the objective was to harmonise the use of the IFTDGN message whilst taking account of them. This resulted in October 1995 in the version 0.5 of the PROTECT Message scenario.

An important reason for the formation of this group, apart from technical message development, was to ensure close co-operation with the container lines. The container lines are, generally speaking, highly automated, so all the necessary information is held, usually centrally, in their computer systems. As these lines use most of the PROTECT ports they would prefer to have one notification procedure for dangerous goods, common to all ports. They would then need to develop only one application in their central computer system.

Again, it became obvious that a purely local approach by each port would not lead to the main objective of a common system of electronic dangerous goods notification.

1.1.2. IMO and European Union legislation

The PROTECT Group examined the IFTDGN framework to ensure that the data requirements of each port were met in terms of the national and international legislation, mainly IMO-based legislation (such as IMDG, ICG and IBC Codes) as well as local port legislation.

Soon after the start of the work it became apparent that the requirements of the so-called HAZMAT Directive of the European Union (EU Council Directive 93/75/EEC of 13 September 1993) were closely aligned to the data contained in the IFTDGN. The group then worked to determine whether the IFTDGN could also satisfy HAZMAT requirements.

The Directive demands that all ships entering European waters, bound for a European port, notify all dangerous goods on board to the National Competent Authorities (NCA) for that port. Again, on leaving a European port all dangerous goods on board have to be notified to the NCA.

The aim of the Directive is to facilitate search and rescue operations for ships in distress in European waters, and to assist in the limitation of environmental damage. Each European member state has to designate a National Competent Authority to which all data has to be notified.

This latest version also contains changes in the IFTDGN that result from a further harmonisation of the requirements to notify dangerous cargo by means of EDI in the participating PROTECT ports and from the need to accommodate the requirements to implement the so-called HAZMAT Directive.

As a rule dangerous goods data is currently sent to the Port Authority 24 hours prior to the arrival of a ship in port. The Port Authority or Harbour Master needs this information to satisfy local or national legislation. If the Harbour Master could also act as the Competent Authority the same data can be sent either directly or on request to the National Competent Authority. In this way a double or parallel notification can be avoided.

For the IFTDGN framework to solve this problem it supports sufficient dangerous goods data to function at three legal levels:

- a) Local/port bylaw legislation
- b) National/international transport legislation
- c) EU-HAZMAT Directive requirements

1.1.3. Present situation

1.1.3.1. IMO

Co-operation between the North European ports was established through the PROTECT Group. The PROTECT ports with the further co-operation of ICHCA and IAPH, presented the PROTECT initiative to IMO (the FAL and SPI Committees) in order to make the principles of the PROTECT standardised notification available to other ports.

As a result, in July 1997 the IMO FAL Committee *“agreed to recommend in principle the use of the IFTDGN Implementation Guide issued by PROTECT as the EDI equivalent of the IMO FAL Form 7 (Dangerous Goods Declaration).”* IMO FAL observed the proximity between the PROTECT Implementation Guide and agreed international standards: *“It is recognised that the PROTECT guide may need slight modifications and enhancements, which take into account the harmonisation recommendations being developed by ITIGG.”*

In September 1998 the PROTECT approach for a new version *was accepted by IMO without restrictions and IMO agreed to issue an IMO Circular to distribute this Guide* as soon as it is available.

1.1.3.2. UN/EDIFACT, ITIGG

PROTECT is permanently represented in ITIGG (International Transport Implementation Guidelines Group, a subgroup of the EDIFACT Working Group, Message Design group D4 for Transport) where decisions are made to implement harmonised international EDI messages.

PROTECT has forwarded comments to ITIGG for alignment of the PROTECT IFTDGN Implementation Guide against the ITIGG Principles and Rules (high level) documentation standard. As a result, ITIGG recommendations for the handling of dangerous goods information for other messages are now fully in line with this version of the PROTECT messages.

In the consultation process with ITIGG, specific comments from Japan and Australia were also taken into account.

Also the PROTECT Guide has been enhanced to align with ITIGG General Recommendations and accommodates new business requirements in the area of special dangerous substances such as noxious substances, radioactive materials and explosives.

The result of this consultation is that the current PROTECT Guide is fully ‘ITIGG compliant’.

PROTECT maintains ongoing studies of new business requirements arising from consultations in ITIGG and elsewhere.

It can be clearly seen that PROTECT, acting in the above context, aims at providing the benefits to carriers of making available one world-wide standard implementation guide for dangerous goods notifications.

1.1.4. Maintenance role

The PROTECT Group will continue to act as the maintenance body for the IFTDGN message.

Having established a sound platform for consultation between the Port Authorities (and their Port EDI Service Providers /Port Community Systems), shipping lines and ITIGG, the PROTECT Group will continue to maintain and promote the implementation of PROTECT EDIFACT messages for the exchange of dangerous goods related information at an international level.

The group will maintain the IFTDGN to reflect changes required by new or changing legislation. Also modifications may be introduced for practical reasons resulting from on-going consultation among Port Authorities, shipping lines and agents.

The PROTECT Group welcomes ideas and recommendations for further improvement in data interchange. Requests, question and remarks should be directed to the:

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1.2. Release notes to PROTECT Guide Version 1.0

The release notes to this PROTECT Guide version 1.0 are detailed in this paragraph. It describes the changes and the reasons to change the PROTECT Guide with respect to the previous version 0.5.

1.2.1. General

1. This version of the PROTECT Guide has been prepared to reflect the results of the further harmonisation of the requirements to notify Dangerous Goods by means of EDI in the participating PROTECT Ports, especially in the field of polluting substances, radio active goods and explosive goods.
2. This version is created to present the total set of requirements in the international agreed ITIGG compliant manner.
3. The messages in this scenario make use of the Draft UN/EDIFACT Directory D.98B.
4. The separate Cancellation message CANMES that was included in the previous PROTECT Guide version 0.5, has been deleted in this version. Its functionality can now be accomplished by an appropriate code in the BGM segment of the IFTDGN. This approach has been taken as the CANMES message is not recognised by UN/EDIFACT as a UNSM (United Nations Standard Message).
5. The separate *Dangerous Cargo List*, IFTIAG message has not been included in this version of the PROTECT Guide. This message served the data flow from the ocean carrier agents in a (previous) port of call/loading of the vessel to the agent(s) in the next port(s) of call/discharge informing the latter on the consignments on board. The latest IFTDGN message can also be used for this purpose. It is considered to be part of the shipping industry's responsibility to cater for the specific DG inter-agent data exchange. The IFTDGN message is able to carry the same data as was contained in the IFTIAG and can consequently be used as 'inter-agent DG information message/Dangerous cargo list'.
6. The versions of PART II and III that belong to this version of PART I are:
 - PART II: Dangerous Goods Notification message IFTDGN, - January 1999, version 1.0,
 - PART III: Acknowledgement message APERAK, - January 1999, version 1.0.
7. For IFTDGN and APERAK the UN/EDIFACT Directory has changed to Draft Directory D.98B (D98B). The Association assigned code for this version of the messages has also been changed. - UNH segment.
8. In these messages the changes due to changed segment and codes have been taken into account.

1.2.2. For the Dangerous Goods Notification message IFTDGN

1. Principle added that party responsible for notification to the PA will be left the choice to use his own determined code that identifies the party or a code assigned by the Port Authority - Principle and NAD segment.
2. Type of notification become mandatory (either for bulk cargo in tanker or other cargoes) - BGM segment.

3. Cancellation of IFTDGN is allowed by adding code - BGM segment (and RFF segment).
4. Date and time for issue of message added - DTM segment.
5. Format of date/times changed to include indication of century - all DTM segments.
6. Handling actions added for restow, cargo tank cleaning, transportation in same port - HAN segments.
7. The equipment name data element has been deleted from the C237 Equipment identification composite, as it is not accepted in the Directory. The segments using C237 are aligned with UN/EDIFACT Segment directory - EDQ and SGP segments.
8. Locations for berth became sub-location of the current port of call - LOC segment
9. Estimated date and time of handling can also be specified in a period - CNI/DTM segment.
10. For goods descriptions, dangerous goods technical names, additional information the format restriction deleted - FTX segments.
11. Instruction added for dangerous goods codes instead of IMDG and additional to IMDG - DGS segment.
12. Subsidiary risks clarified by adding instruction, also examples to complete the segment added- DGS segment.
13. Explicit indication by a code has been added for Dangerous goods in limited quantities together with an example - DGS and DGS/FTX segment.
14. Instruction added for additional EmS or MFAG numbers - DGS/FTX segment.
15. Instruction added for noxious or polluting bulk liquids (as required under MARPOL) - DGS/FTX segment.
16. Instruction added for radioactive materials - DGS/FTX segment
17. Radio active index of transport, Radioactivity and Net explosive weight added - DGS/MEA and DGS/SGP/MEA segment
18. Hatch cover number and status added - DGS/LOC, DGS/SGP/LOC segments.
19. Version number added for the Amendment number to IMO Regulation - DGS segment
20. Empty indicator added for container is contaminated or carries residue cargo.
21. Further it is noted that several code or qualifier values have been updated to reflect latest directory and agreements (e.g. in HAN, MEA and RFF segment)

1.2.3. Application Error and Acknowledgement message APERAK

1. Format of date/times changed to include indication of century - DTM segment.
2. Addition of possibility to include the Freight forwarder's reference, Carrier's agent reference and Ships stay reference as a key reference to/in the data of the IFTDGN message being replied to - RFF segment.
3. The code list for error code has been updated - code list for ERC segment.

1.2.4. Millennium-proof

To avoid the risk of problems in EDI that could be caused by the Year 2000, it is recommended to use the ISO-9735 syntax version 4, which provides in UNB and UNG segments a date field (0017) in the format of n8, to allow the century to be included (e.g. 20000102, for January 2, 2000).

It is noted that also the conversion to (and from) in house file formats may be effected and may need to be adapted in this respect.

It is noted that the UNH segment when using syntax version 4 is also different from the UNH segment documented in the included messages. The UNH segment of syntax version 4, however, is upwards compatible with the UNH segment as documented .

2. PROTECT Dangerous Goods Messages

2.1. Scope

The aim of PROTECT is to facilitate the authorities to improve the safety in their ports and waterways by controlling the flow of dangerous cargo through their areas.

To that aim, PROTECT has designed a set of messages that covers the required information flows pertaining to dangerous goods between carriers, their agents and freight forwarders in the ports/places of call of a vessel, barge, truck or train during its journey/conveyance to allow the local agents to notify/declare these dangerous goods to the local authority.

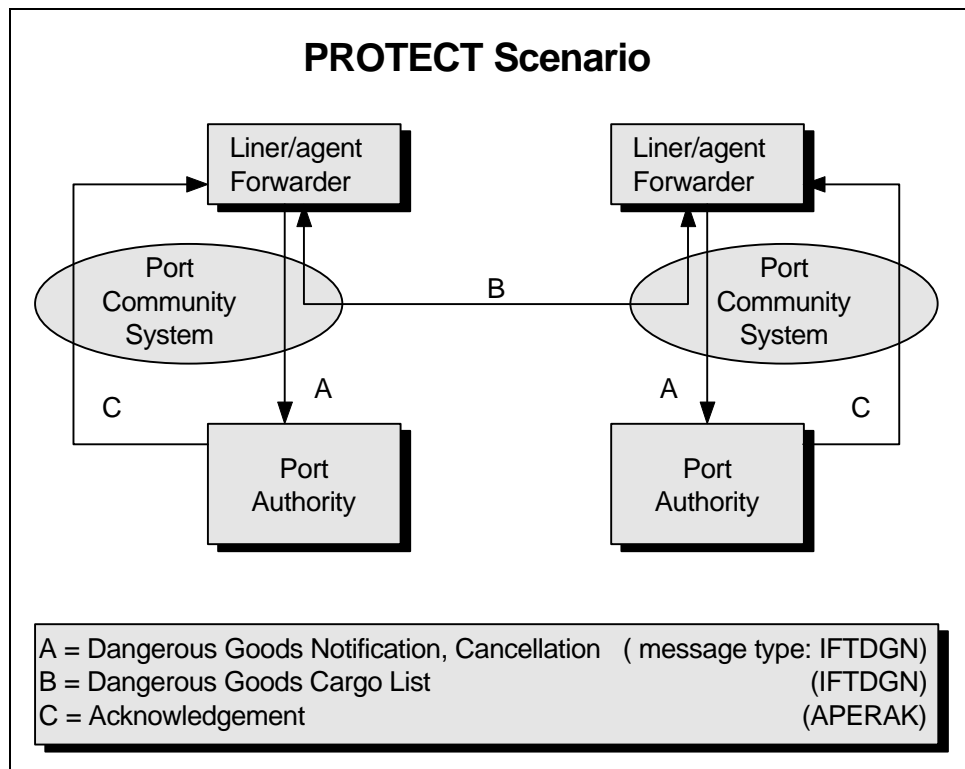
2.2. Message scenario

To support the notification of dangerous goods carried or to be carried by a means of transport to any national authority the PROTECT message design group designed a scenario of messages to cover the information requirements.

This scenario constitutes of the following messages:

- Dangerous Goods Notification message (message type: IFTDGN), by which a carrier's agent and/or a forwarder notifies the dangerous goods towards the authority or by which he cancels a previously sent notification message.
- Acknowledgement message (message type: APERAK), by which the authority acknowledges receipt of an IFTDGN and informs the sender about the results of the processing in the authority's application (such rejected, accepted, conditionally accepted (meaning reissue of notification)).
- Dangerous Cargo List message, by which ocean carrier's agents and/or forwarders inform each other about the dangerous cargo on board. The Dangerous Cargo List information can now also be conveyed in the structure of the IFTDGN message - see release notes.

The following figure depicts the information flows between the parties currently covered/defined in the scenario (using the sea mode terms for these parties):



From the picture is clear that the scenario as such is applicable and suitable for the sea mode of transport involving ocean carrier's agents, forwarders and (Port) Authorities. Additionally the Dangerous Goods Notification message is also made suitable to cover the requirements for the inland water mode of transport.

In the picture above the parties involved for the inland water mode of transport are barge operators and/or their agents and inland water authorities.

2.3. Functional definitions

This paragraph contains the functional definitions of the messages in the PROTECT scenario. The definitions given are those contained in the UN/EDIFACT messages. If needed an extra note is added to clarify the context within the PROTECT environment.

2.3.1. International Forwarding and Transport Dangerous Goods Notification message (IFTDGN)

The IFTDGN is a message

from the party responsible to declare the dangerous goods (e.g. carrier's agent, freight forwarder)

to the party acting on behalf of the local authority performing the checks on conformance with the legal requirements on the control of dangerous goods, normally Port Authority,

conveying the information relating to one conveyance/voyage of a means of transport such as a vessel, train, truck or barge, on the dangerous goods being loaded, unloaded, and/or in transit, etc.

Note: Within the application area of this PROTECT IFTDGN message the recipient party (acting on behalf of the local authority) may be either the Port Authority or the Inland Waterway Authority, the sender parties consequently are those related to either the ocean carrier and the barge operator.

2.3.2. Acknowledgement message (APERAK)

The APERAK message (full name: Application Error and Acknowledgement message) is a message:

- a) to acknowledge to a message issuer the receipt of his message by the addressee's application.
- b) to inform a message issuer that his message has been received by the addressee's application and has been rejected due to errors encountered during its processing in the application.

The message can be used to answer to an IFTDGN message.

3. References and explanation

3.1. References

The message specifications (the message implementation guides) are based on the *United Nations Trade Data Interchange Directory* (UNTDID) and *UN/EDIFACT Draft directory D.98B*.

The following interdependent documents, which are included in this *UN/EDIFACT Draft directory*, are required in order to interpret, understand and use EDIFACT messages:

1. *UN/EDIFACT Syntax Rules* (ISO 9735), which define in concise form the standard for formatting data elements and segments into messages (Part 4, section 2.2 of UNTDID).
2. *UN/EDIFACT Syntax Implementation Guidelines*, which expand on some of the details of the syntax rules (Part 4, section 2.3 of UNTDID).
3. *UNECE UNSM General Introduction to UNSM descriptions Section 2*, which explains terms and gives definitions used in the EDIFACT standard (Part 4, section 2.6 of UNTDID).

These documents can be downloaded from the Internet world wide web site of the United Nations:

<http://www.unece.org/trade/untdid/Welcome.html>

- The message specifications are also based on the *Principles & Rules for the Implementation of Transport EDI messages for IFTDGN and APERAK*, published by ITIGG.

These documents can be downloaded from the Internet world-wide-web site of ITIGG:

<http://www.tradegate.org.au/itigg.htm>

- This document including the message specifications (EDIFACT Message Implementation Guides) are also available for download on the Internet world-wide-web site of EurotransPortnet:

<http://www.eurotransportnet.org/>

3.2. Explanation of notations in segment specifications

3.2.1. Introduction

In Part II and III, instructions for use are given for each PROTECT message. Each part deals with one message. In the third section the *Segment Specifications* of the relevant message segments are dealt with.

How to interpret those Segment specifications is explained in this chapter.

3.2.2. Explanation of Notation

The notation for the segments and the data elements is explained in this paragraph in two steps.

Firstly the layout of a segment (above the straight line) is explained.

Secondly (under the straight line) the description of the data elements is given. Only those data elements are described that are actually used in the segment.

The definition and meaning of the data elements, also conditions that apply and instructions will be given.

Example of Segment layout:

NAD	NAME AND ADDRESS	(NAD group)	M
Function:	To specify the name/address and their related function, either by C082 only and/or unstructured by C058 or structured by C080 thru 3207.		
3035	PARTY QUALIFIER	M an..3	M
C082	PARTY IDENTIFICATION DETAILS	C	-
3039	Party Id identification	M an..17	-
1131	Code list qualifier	C an..3	-
3055	Code list responsible agency, coded	C an..3	-
C058	NAME & ADDRESS	C	M
3124	Name and address line	M an..35	M
3124	Name and address line	C an..35	C
3124	Name and address line	C an..35	C
3124	Name and address line	C an..35	C
3124	Name and address line	C an..35	C
C080	PARTY NAME	C	-
3036	Party name	M an..35	-
3036	Party name	M an..35	-
3036	Party name	C an..35	-
3036	Party name	C an..35	-
3036	Party name	C an..35	-
3045	Party name format, coded	C an..3	-
C059	STREET	C	-
3042	Street and number/P.O. Box	M an..35	-
3042	Street and number/P.O. Box	M an..35	-
3164	CITY NAME	C	-
3229	COUNTRY SUB-ENTITY IDENTIFICATION	C	-
3251	POSTCODE IDENTIFICATION	C	-
3207	COUNTRY, CODED	C	-

Explanation:

The first line gives the tag of the segment (NAD) and its full name (NAME AND ADDRESS). If the segment occurs in a group, that group is mentioned between brackets (NAD group).

The first line will always show whether (within the group) the segment should be included (M = Mandatory) or may or can be included (C = Conditional) in the message. In the latter case a condition that applies may be spelled out below the straight line (see below).

On the next line(s), a short description of the function of the segment according to the EDIFACT Trial Data Segment Directory (TRSD) is given.

After the function of the segment the data elements and/or composite data elements used in the segment are specified in six columns:

- 1 The first column gives the tag of the data element according to the EDIFACT segment layout, e.g.:
3035 for simple data elements;
C059 for composite data elements that contains simple data elements.
- 2 The second column gives the full name belonging to the tag of the data element. Simple data elements and composite data elements are shown in CAPITALS and component data elements are shown in small letters.
- 3 The third column describes the usage of the (composite) data element in that segment according to the EDIFACT definition:
M = Mandatory: (composite) data element must be completed in the segment;
C = Conditional: (composite) data element in the segment may be completed or is to be completed when a certain condition is met; the condition is given under the straight line;
- 4 The fourth column describe the character representation of the data element according to the EDIFACT definition:
a = alphabetic characters,
n = numeric characters,
an = alphabetic and numeric characters,
3 = fixed length of 3 characters,
..35 = undefined data unit size where "35" indicates the maximum number of available character positions.

The representation is expressed by data type directly followed by length, e.g.:

n3 = 3 numeric characters, fixed length
an..35 = up to 35 alphanumeric characters

- 5 The fifth column describes the usage of the (composite) data element in that segment (M and C: see column three):
- = Not used: (composite) data element is not to be completed in this segment.

Example of Description of the data elements (below the straight line):

Tag	M/C	Value	Description
3035			PARTY QUALIFIER Code giving specific meaning to a party:
	M	FW	FREIGHT FORWARDER: [3170] Party undertaking forwarding of goods.
Occurrence: 3			
C058			NAME & ADDRESS Unstructured name and address: one to five lines.
3124			Name and address line Free form name and address description.
Instruction: Full name and address of the freight forwarder's organization.			

Explanation:

The column *Tag* and *Description* give the tag number and the definition respectively of the (composite) data element as contained in the corresponding EDIFACT directories.

For coded data elements and qualifiers the columns *M/C* and *Value* give details about the usage of codes. The *Value* column may contain the value or values that are possible for the data element. The definition belonging to the code value is also given in the column description.

A four digit number between brackets in a definition of a code value is a reference (tag) to the corresponding data element in the UNTDED (United Nations Trade Data Elements Directory). In the above example [3170] means that qualifier FW for freight forwarder has the same definition as data element with tag 3170 in the UNTDED.

The column *M/C* indicates whether a value is Mandatory or Conditional for that data element in the segment:

M = Mandatory:	value should occur for the data element;
C = Conditional:	value may occur for the data element or is to occur for the data element when a certain condition is met.

If you can make a selection from several values, all indicated as 'C', one of the values must be selected if the data element is used. For this situation no separate condition is given.

After *Occurrence*: the maximum number of occurrences of this segment (group) is stated. In this example maximum three forwarder NAD's may be mentioned in the message.

After *Instruction*: a clarifying description on the meaning and usage of the data element is given.

After *Condition*: the condition is stated that is to be met for a conditional code value or for a conditional data element. A condition may also apply to the occurrence of the segment. Normally, it means that the contents of a data element depends on the contents of another data element in the message.

Note:

Please note from the above clarifications that there is a *hierarchy* in the layers of the information in the segment groups, segments, (composite) data elements and code and qualifier values.

This sequence is particularly important to be able to read from this message specification whether a certain data element or code value (on which a certain attribute is mapped) is to occur in that place in the message or not.

The hierarchy is top down, as follows:

- 1st M/C indication for the *segment group* - as per branching diagram;
- 2nd M/C indication for the *segment* - as per branching diagram and as indicated on the first line of the segment specification;
- 3rd M/C indication for the *composite data element* in the segment - as indicated above the straight line of the segment specification;
- 4th M/C indication for the *data element* - as indicated also above the straight line of the segment specification;
- 5th M/C indication for the *code* or *qualifier value* - as indicated below the straight line of the segment specification.

Applying this rule bottom up, this means that a certain code value indicated as mandatory for a certain data element, does not necessarily occur depending on the higher levels. So, if a code value occurs in a data element that is conditional in a composite that is mandatory in a segment that is mandatory in a segment group that is conditional, and if none of the conditions are met, that code value does not occur in the message.